

What is claimed is:

1. A baseband signal multiplexing circuit for multiplexing a plurality of baseband signals spread with different spread codes into one baseband signal, comprising:

5 a plurality of baseband filters for respectively limiting bands of the respective baseband signals input thereto;

adding means for adding and code-multiplexing the plurality of baseband signals with the bands limited by
10 said respective baseband filters to produce one baseband signal;

level adjusting means for adjusting an amplitude value of the baseband signal produced by said adding means based on a control signal to output the signal;

15 D/A converting means for converting the baseband signal which is a digital signal outputted from said level adjusting means into an analog signal; and

gain setting means for calculating a gain set value with which the amplitude value of the baseband signal
20 outputted from said level adjusting means is adjusted to an amplitude value matching a dynamic range of said D/A converting means based on the number of transmission codes which is the number of multiplexed baseband signals, and for notifying said level adjusting means of the gain set

25 value with said control signal.

2. A baseband signal multiplexing circuit for multiplexing a plurality of baseband signals spread with different spread codes into one baseband signal, comprising:

5 a plurality of baseband filters for respectively limiting bands of the respective baseband signals input thereto;

10 a plurality of level adjusting means for respectively adjusting amplitude values of the plurality of baseband signals with the bands limited by said respective baseband filters based on a control signal to output the signals;

15 adding means for adding and code-multiplexing the plurality of baseband signals outputted from said respective level adjusting means to produce one baseband signal;

D/A converting means for converting the baseband signal which is a digital signal outputted from said adding means into an analog signal; and

20 gain setting means for calculating a gain set value with which an amplitude value of the baseband signal outputted from said adding means is adjusted to an amplitude value matching a dynamic range of said D/A

converting means based on the number of transmission codes
25 which is the number of multiplexed baseband signals, and
for notifying said level adjusting means of the gain set
value with said control signal.

Sub
A'

3. A baseband signal multiplexing circuit for
multiplexing a plurality of baseband signals spread with
different spread codes into one baseband signal,
comprising:

- 5 a plurality of baseband filters for respectively
limiting bands of the respective baseband signals input
thereto;
- 10 a plurality of level adjusting means for
respectively adjusting amplitude values of the plurality of
baseband signals with the bands limited by said respective
baseband filters based on a plurality of control signals to
output the signals;
- 15 adding means for adding and code-multiplexing
the plurality of baseband signals outputted from said
respective level adjusting means to produce one baseband
signal;
- 20 D/A converting means for converting the baseband
signal which is a digital signal outputted from said adding
means into an analog signal; and
- gain setting means for calculating, for

A
only

respective said level adjusting circuits, gain set value
with which an amplitude value of the baseband signal
outputted from said adding means is adjusted to an
amplitude value matching a dynamic range of said D/A
25 converting means based on the number of transmission codes
which is the number of multiplexed baseband signals and
based on interchannel ratio information for specifying an
amplitude ratio of the respective baseband signals when the
plurality of baseband signals are multiplexed, and for
30 notifying said level adjusting means of the gain set values
with said plurality of control signals.

4. A baseband signal multiplexing circuit for
multiplexing a plurality of baseband signals spread with
different spread codes into one baseband signal,
comprising:

- 5 adding means for adding and code-multiplexing
the respective baseband signals input thereto to produce
one baseband signal;
- a baseband filter for limiting a band of the
baseband signal produced by said adding means;
- 10 a level adjusting means for adjusting an
amplitude value of the baseband signal with the band
limited by said baseband filter based on a control signal
to output the signal;

D/A converting means for converting the baseband

15 signal which is a digital signal outputted from said level
adjusting means into an analog signal; and

gain setting means for calculating a gain set
value with which the amplitude value of the baseband signal
outputted from said level adjusting means is adjusted to an
20 amplitude value matching a dynamic range of said D/A
converting means based on the number of transmission codes
which is the number of multiplexed baseband signals and,
for notifying said level adjusting means of the gain set
value with said control signal.

5. A baseband signal multiplexing circuit for
multiplexing a plurality of baseband signals spread with
different spread codes into one baseband signal,
comprising:

5 a plurality of baseband filters for respectively
limiting bands of the respective baseband signals input
thereto;

10 a plurality of first level adjusting means for
respectively adjusting amplitude values of the plurality of
baseband signals with the bands limited by said respective
baseband filters based on a plurality of first control
signals to output the signals;

adding means for adding and code-multiplexing

the plurality of baseband signals outputted from said
15 respective first level adjusting means to produce one
baseband signal;

second level adjusting means for adjusting an
amplitude value of the baseband signal produced by said
adding means based on a second control signal to output the
20 signal;

D/A converting means for converting the baseband
signal which is a digital signal outputted from said second
level adjusting into an analog signal; and

gain setting means for outputting to said
25 respective first level adjusting means the first control
signals for adjusting amplitude ratios of the respective
baseband signals in accordance with interchannel ratio
information for specifying amplitude ratios of the
respective baseband signals when the plurality of baseband
30 signals are multiplexed, for calculating a gain set value
with which the amplitude value of the baseband signal
outputted from said second level adjusting means is
adjusted to an amplitude value matching a dynamic range of
said D/A converting means based on the number of
35 transmission codes which is the number of multiplexed
baseband signals, and for notifying said second level
adjusting means of the gain set value with said second
control signal.

6. A baseband signal multiplexing circuit for multiplexing a plurality of baseband signals spread with different spread codes into one baseband signal, comprising:

5 a plurality of first level adjusting means for respectively adjusting amplitude values of said respective baseband signals input thereto based on a plurality of first control signals;

10 adding means for adding and code-multiplexing the plurality of baseband signals outputted from said respective first level adjusting means to produce one baseband signal;

 a baseband filter for limiting a band of the baseband signal produced by said adding means;

15 second level adjusting means for adjusting an amplitude value of the baseband signal with the band limited by said baseband filter based on a second control signal to output the signal;

20 D/A converting means for converting the baseband signal which is a digital signal outputted from said second level adjusting means into an analog signal; and

 gain setting means for outputting to said respective first level adjusting means the first control signals for adjusting an amplitude ratio of the respective

- DRAFT 02/07/60
- 25 baseband signals in accordance with interchannel ratio information for specifying an amplitude ratio of the respective baseband signals when the plurality of baseband signals are multiplexed, for calculating a gain set value with which the amplitude value of the baseband signal
- 30 outputted from said second level adjusting means is adjusted to an amplitude value matching a dynamic range of said D/A converting means based on the number of transmission codes which is the number of multiplexed baseband signals, and for notifying said second level
- 35 adjusting means of the gain set value with said second control signal.

Sub
A2

7. A level adjusting circuit comprising:
- a plurality of bit shift means for shifting input baseband signals to the right by different certain bits;
- 5 a plurality of switches for selecting outputs from said respective bit shift means in accordance with a desired gain desired to be set; and
- an adder for adding outputs from said respective switches for output as one signal.

8. A baseband signal multiplexing circuit for multiplexing a plurality of baseband signals spread with

DRAFTED BY
DRAFTED BY
DRAFTED BY
DRAFTED BY

different spread codes into one baseband signal,
comprising:

- 5 a plurality of baseband filters for respectively
limiting bands of the respective baseband signals input
thereto, and for adjusting amplitude values of the
respective baseband signals based on a control signal to
output the signals;
- 10 adding means for adding and code-multiplexing
the plurality of baseband signals with the bands limited by
said respective baseband filters to produce one baseband
signal;
- 15 D/A converting means for converting the baseband
signal which is a digital signal outputted from said adding
means into an analog signal; and
- 20 gain setting means for calculating a gain set
value with which an amplitude value of the baseband signal
outputted from said adding means is adjusted to an
amplitude value matching a dynamic range of said D/A
converting means based on the number of transmission codes
which is the number of multiplexed baseband signals and for
notifying said level adjusting means of the gain set value
with said control signal.

9. The baseband signal multiplexing circuit
according to claim 8, wherein each of said respective

baseband filters includes:

- a plurality of delay elements connected in
- 5 series, for delaying input signals by a certain time period
- to output the signals as tap outputs;
- a plurality of coefficient multipliers, for
- multiplying each of the tap outputs by a filter coefficient
- of a plurality of preset filter coefficients that is
- 10 specified by a control signal; and
- an adder for adding a plurality of output
- signals from said respective coefficient multipliers to
- output the resulting signal.

10. A method of controlling a transmission level in
a baseband signal multiplexing circuit for multiplexing a
plurality of baseband signals spread with different spread
codes into one baseband signal, said method comprising the
5 steps of:

- calculating a gain set value with which an
- amplitude value of a multiplexed baseband signal matches a
- dynamic range in D/A conversion based on the number of
- transmission codes which is the number of multiplexed
- 10 baseband signals; and
- adjusting the amplitude value of the code-
- multiplexed baseband signal prior to the D/A conversion
- based on the gain set value.

11. A method of controlling a transmission level in
a baseband signal multiplexing circuit for multiplexing a
plurality of baseband signals spread with different spread
codes into one baseband signal, said method comprising the
5 steps of:

limiting bands of the respective baseband
signals input thereto;

10 adding and code-multiplexing the plurality of
baseband signals with the limited bands to produce one
baseband signal;

15 calculating a gain set value with which an
amplitude value of the code-multiplexed baseband signal
matches a dynamic range in D/A conversion based on the
number of transmission codes which is the number of
multiplexed baseband signals;

adjusting the amplitude value of the code-
multiplexed baseband signal based on the gain set value;
and

20 D/A converting the baseband signal with the
adjusted amplitude value into an analog signal.

12. A method of controlling a transmission level in
a baseband signal multiplexing circuit for multiplexing a
plurality of baseband signals spread with different spread

codes into one baseband signal, said method comprising the
5 steps of:

limiting bands of the respective baseband
signals input thereto;

calculating a gain set value with which
amplitude values of the plurality of baseband signals with
10 the limited bands match a dynamic range in D/A conversion
based on the number of transmission codes which is the
number of multiplexed baseband signals;

adjusting the amplitude values of the plurality
of baseband signals with the limited bands based on the
15 gain set value;

adding and code-multiplexing the plurality of
baseband signals after the adjustment of the amplitude
values to produce one baseband signal; and

D/A converting the baseband signal after the
20 code-multiplexing into an analog signal.

13. A method of controlling a transmission level in
a baseband signal multiplexing circuit for multiplexing a
plurality of baseband signals spread with different spread
codes into one baseband signal, said method comprising the
5 steps of:

limiting bands of the respective baseband
signals input thereto;

00000000000000000000000000000000

calculating, for the respective baseband signals,
gain set values with which amplitude values of the
10 plurality of baseband signals with the limited bands match
a dynamic range in D/A conversion based on the number of
transmission codes which is the number of multiplexed
baseband signals;

adjusting the amplitude values of the plurality
15 of baseband signals with the limited bands based on the
gain set values;

adding and code-multiplexing the plurality of
baseband signals after the adjustment of the amplitude
values to produce one baseband signal; and
20 D/A converting the baseband signal after the
code-multiplexing into an analog signal.

14. A method of controlling a transmission level in
a baseband signal multiplexing circuit for multiplexing a
plurality of baseband signals spread with different spread
codes into one baseband signal, said method comprising the
5 steps of:

adding and code-multiplexing the respective
baseband signals input thereto to produce one baseband
signal;

limiting a band of the code-multiplexed baseband
10 signal;

calculating a gain set value with which an amplitude value of the baseband signal with the limited band matches a dynamic range in D/A conversion based on the number of transmission codes which is the number of
15 multiplexed baseband signals;

adjusting the amplitude value of the baseband signal with the limited band based on the gain set value;
and

D/A converting the baseband signal after the
20 adjustment of the amplitude value into an analog signal.

Sub
A3

15. A method of controlling a transmission level in a baseband signal multiplexing circuit for multiplexing a plurality of baseband signals spread with different spread codes into one baseband signal, said method comprising the
5 steps of:

limiting bands of the respective baseband signals input thereto;

adjusting respective amplitude values of the plurality of baseband signals with the limited bands based
10 on a specified ratio;

adding and code-multiplexing the respective baseband signals after the adjustment of the amplitude values to produce one baseband signal;

calculating a gain set value with which an

Sub
A3

15 amplitude value of the code-multiplexed baseband signal matches a dynamic range in D/A conversion based on the number of transmission codes which is the number of multiplexed baseband signals;

20 adjusting the amplitude value of the code-multiplexed baseband signal based on the gain set value; and

D/A converting the baseband signal after the adjustment of the amplitude value based on the gain set value into an analog signal.

16. A method of controlling a transmission level in a baseband signal multiplexing circuit for multiplexing a plurality of baseband signals spread with different spread codes into one baseband signal, said method comprising the 5 steps of:

adjusting respective amplitude values of the respective baseband signals input thereto based on a specified ratio;

10 adding and code-multiplexing the respective baseband signals after the adjustment of the amplitude values to produce one baseband signal;

limiting a band of the code-multiplexed baseband signal;

calculating a gain set value with which an

Sub
A3

15 amplitude value of the baseband signal with the limited band matches a dynamic range in D/A conversion based on the number of transmission codes which is the number of multiplexed baseband signals;

adjusting the amplitude value of the baseband
20 signal with the limited band based on the gain set value;
and

D/A converting the baseband signal after the
adjustment of the amplitude value based on the gain set
value into an analog signal.

17. A method of controlling a transmission level in
a baseband signal multiplexing circuit for multiplexing a
plurality of baseband signals spread with different spread
codes into one baseband signal, said method comprising the
5 steps of:

calculating a gain set value with which
amplitude values of the respective baseband signals input
thereto match a dynamic range in D/A conversion based on
the number of transmission codes which is the number of
10 multiplexed baseband signals;

limiting bands of the input respective baseband
signals, and adjusting the amplitude values of the
respective baseband signals based on the gain set value by
selecting a filter coefficient to be multiplied by each of

- 15 tap outputs obtained by delaying the input baseband signals by a certain time period;
- adding and code-multiplexing the plurality of baseband signals with the limited bands and the adjusted amplitude values to produce one baseband signal; and
- 20 converting the code-multiplexed baseband signal which is a digital signal into an analog signal.